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ABSTRACT

A qualitative study examined experiences between mentors and youth apprentices from the standpoint of situated cognition theory. The youth apprenticeship program studied was located in a rural southeastern community. High school youth apprentices worked with adult mentors and management personnel in selected businesses in the fields of business management, automotive mechanics, and computer electronics. Data were collected from the following sources: literature on situated learning; observations of youth apprenticeship programs; interviews with program participants; and analysis of selected program documents. The mentors were found to be using various techniques associated with a cognitive apprenticeship environment, including modeling, coaching, and scaffolding. Mentors were providing apprentices with as many experiences as possible to help them discover/explore all aspects of jobs, gain confidence in their abilities by applying their knowledge, and observe and demonstrate the social skills needed to deal with other employees and customers. Most apprentices found their work experiences challenging and interesting and most felt that their mentors were helping them learn job skills and other important work attitudes and behaviors. It was concluded that more extensive adoption of the instructional techniques used in apprenticeship programs would have positive effects for students, schools, and businesses. (Contains 39 references.) (MN)

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# Emerging themes in youth apprenticeship programs:

## A qualitative study

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Abstract

A major concern of our current educational system is instructional practices that emphasizes abstract rather than contextual learning methods. Youth apprenticeship programs are designed to situate learning in the workplace, thereby providing students with contextual, meaningful, and relevant use of knowledge taught in school. In contrast to traditional educational practices, which rely on the transfer of knowledge from one situation to another, the situated cognition theory places learning in a community of experienced practitioners in an effort to place learning in the context it will be used. This dissertation research seeks to determine the effectiveness of youth apprenticeship programs by gathering data related to the situated cognition theory of learning and instruction. Data will be collected and analyzed qualitatively through observations and interviews of management, adult mentors, and youth apprentices and through analysis of documents.

Emerging Themes in Youth Apprenticeship Programs: A Qualitative Study

Our current educational system has been criticized for doing an inadequate job of preparing students for work and adult life. Part of this inadequacy may result from programs and curriculums used in schools that focus on preparing students for college rather than work (Kazis, 1993). However, recent reports indicate that approximately 60% of high school graduates do not go to college (Filipczak, 1992). In fact, many jobs currently available to high school graduates either require little education or training beyond high school or require specialized technical training rather than a four-year college degree (Carson, Huelskamp, & Woodall, 1993; Hodgkinson, 1985).

Inadequate preparation for work and life after high school may partially result from a historic lack of formal school-to-work transition programs for youth (Aring, 1993). Students often exit high school with little or no formal training to prepare them for life in an adult world. In addition to work-related skills and concerns, appropriate social skills needed for life as independent adults are often lacking in high school graduates. Exposure to typical adult social skills, such as being a worker, a member of a community, and a spouse and/or parent, may assist young adults in becoming effective and productive citizens of a workplace as well as a community. According to Pallas (1993), students need socialization skills "so that they can carry out the adult roles embedded in the structure of the society" (p. 411).

To assists students in becoming independent workers and adults, schools are beginning to explore and implement school-to-work transition programs that may better prepare students for life after high school. School-to-work transition is defined "as a condition where the student can demonstrate the skills necessary for entry into a primary labor market occupation or career path consistent with his or her aspirations" (Stone, 1992, p. 7). Effective school-to-work transition programs may not only provide students with relevant educational experiences that resemble work experiences they may encounter after graduation, these programs may also provide students with critical social skills needed for adult life by allowing students to participate in the adult world of work before exiting high school (Cremin, 1989; Pallas, 1993).

There are a variety of transition programs available for student participation and for research. Youth apprenticeships were selected for this study because they can provide a holistic and practical school-to-work transition program that integrates relevant learning with social activities needed for cognitive development (Bailey, 1993). Youth apprenticeships give students the opportunity to utilize school knowledge with real work activities to provide a bridge between intellectual and cognitive skills by utilizing contextual problem-solving in real world, authentic settings (Raizen, 1989).

Youth apprenticeship programs also provide students an opportunity to acquire skills and knowledge under the guidance of a mentor or master craft's person (Smith & Rojewski, 1993). This arrangement allows for guided work experiences and learning opportunities not always found in other programs (Stern, 1992). According to Hamilton (1989), a mentor's responsibilities include instructing a learner, demonstrating a task to a learner, coaching the learner as tasks are performed, explaining why tasks are done in a particular way, challenging the learner to do well, initiating the learner into the workplace culture, and affirming the learner's value as a person. Haensly and Parsons (1993) add that mentors assist learners in gaining important social skills and increasing their independence and autonomy.

## Purpose of the Study

With increased interest in the workplace as a learning environment for adolescents, appropriate pedagogy is needed to guide the implementation and effectiveness of work-based programs. The purpose of this qualitative study will be to explore, discover, and describe experiences between mentors and youth apprentices in a youth apprenticeship program as those experiences relate to situated cognition theory. Observations, interviews, and document analysis will be used resulting in a naturalistic description of themes or patterns. At this stage in the research, situated cognition theory will be generally defined as a social situation and its relationship to learning. Results of this study may contribute to the effectiveness of learning in the workplace and youth apprenticeship programs by providing information on how *participants* feel about learning in a workplace.

## Research Questions

1. What learning/teaching experiences occur between mentors and youth apprentices in workplaces participating in youth apprenticeship programs?
2. What teaching methods and behaviors do mentors (or other experienced workers) use when working with youth apprentices?
3. How does the apprentice experience these methods and behaviors?
4. Do participants believe a more relevant and useful education is acquired by participating in the workplace component of youth apprenticeships?

## Conceptual Framework

Situated cognition theory appears to provide a suitable framework for observing how individuals learn in a workplace. Situated cognition theory views learning in a real world environment as a more effective and relevant model of learning because it places learning in a community of expert practitioners. Furthermore, several strategies for providing effective learning associated with situated cognition have their basis in traditional apprenticeship approaches to learning (Lave, 1988).

Situated cognition can be traced back to John Dewey in the late 1800s as well as to Vygotsky in the early to mid-1900s. Dewey was involved in what is known as the progressive education movement (Berryman & Bailey, 1992; Niebuhr, 1984; Olafson, 1977). Progressivists believed education should take place within the community rather than in isolation from the community (Lerwick, 1979). Similarly, Dewey believed that schools should provide meaning and relevance to learning activities to meet needs of society. In essence, Dewey advocated "the integration of the head and hand, of mind and action, of academic and vocational" (Berryman & Bailey, p. 76).

Similarly, Vygotsky developed a theoretical framework that combined social institutions, culture, activities, and cognition. Vygotsky referred to his work as the theory of activity (Davydov & Radzikhovskii, 1985). According to this theory, learning occurs most effectively when individuals are involved in practical activities that incorporate use of tools common to a particular culture or society. Furthermore, the theory of activity states that in order for learning

to occur, individuals should be able to recognize and associate past experiences with new experiences. When individuals can make this association with the past, learning has become functional and incorporated in the mind for use in other situations.

Although often met with debate from researchers with differing views, Dewey and Vygotsky provided new opportunities for exploring how learning occurs. Cognitive psychologists, borrowing from Dewey and Vygotsky, began conducting studies on learning within a community. They referred to their research as "situated cognition" (Brown, Collins, & Duguid, 1989; Collins, Brown, & Newman, 1989; Lave, 1988). Situated cognition states that whenever possible, learning should occur within the context of a given situation and should attempt to replicate as closely as possible practices used by experts in a given culture. Situated cognition theory focuses on "the relationship between learning and the social situations in which it [i.e., learning] occurs" (Lave & Wenger, 1991, p. 14). The foundation of situated learning is the placement of learning in a *real-life* context rather than as an individual abstract mental activity (Schell & Babich, 1993).

This theory was selected because of its emphasis on learning in a real-world environment. Since a youth apprenticeship program occurs within a given community, situated cognition appears to hold promise for seeking answers to the questions posed in this study. In the context of this study, situation cognition theory may be used as a foundation because of its emphasis on learning in a real-life context.

## Research Design

Qualitative procedures will be used for this study because I want to explore, discover, and describe the nature of experiences between mentors and youth apprentices in a youth apprenticeship program. I will use a constructivist paradigm to gather, analyze and interpret, and report the experiences of participants. I will use the situated cognition theory as a guide for comparing the data because situated cognition focuses on learning and its relationship to the social situation in which learning occurs (Lave & Wenger, 1991).

The constructivist paradigm is "a wide-ranging eclectic framework" (Schwandt, 1994, p. 128). Constructivists emphasize the world of experience at it is felt by participants. Constructivists believe that knowledge and truth are created rather than discovered. This

paradigm acknowledges that knowledge is socially constructed through a culture's history. From this perspective, knowledge is developmental and non-objective (Brooks & Brooks, 1993; Reid, Kurkjian, & Carruthers, 1994).

This study will also use a theoretical orientation for gathering specific data related to situated cognition theory. By using a specific theory for data collection, the researcher maintains a focus for the study, is able to integrate pieces of information into a whole, and offer a general explanation of the phenomenom being studied (Henstrand, 1993; Lincoln & Guba, 1985; Merriam, 1988). Maintaining a focus related to a theory assists the researcher in making decisions about what information to retain and discard. This focus also assists the researcher in reporting what occurs in natural settings by using theory to compare what was observed with what the theory states.

## Data Collection Procedures

This study will focus on a youth apprenticeship program located in a small, rural southeastern community. The participants are high school youth apprentices, adult mentors, and management personnel working in selected businesses. Students in the youth apprenticeship program were in the following vocational areas: business management, automotive mechanics, and computer electronics. The focus of this study will be the everyday experiences and events of mentors and youth apprentices in the workplace. Particular attention will be paid to the learning/teaching experiences and behaviors that occur between mentors and youth apprentices. Data will be collected using observations, interviews, and document analysis.

### Participant Observation

Participant observation is a data collection method that allows a researcher to gather impressions of the situation firsthand and record behavior as it occurs (Adler & Adler, 1994; Merriam, 1988). Participant observation lets the researcher observe who and what is involved, where and when events occur, and how and why events occur. Participant observation allows researchers to see behaviors and actions as they occur rather than just relying on accounts from interviews.

In this study, all observations will be recorded using field notes to describe interactions between youth apprentice and mentor, activities the apprentice is engaged in, any statements made by the apprentice regarding how the given task was learned, and other subtle factors such as how participants react to unplanned events, contextual meaning of words or actions, and nonverbal communications (Merriam, 1988). Field notes will include descriptive notes of participants and activities, reflective notes regarding my feelings or impressions at the time, and demographic information about the time, place, and date of the observation (Creswell, 1994).

Interviews

Interviews are a face-to-face questioning of participants for the purpose of gathering data (LeCompte & Preissle, 1993). Interviews attempt to "find out what is in and on someone else's mind" (Patton, 1990, p. 278). Interviewing is used when behaviors, feelings, attitudes, or interpretations of people cannot be directly observed (Merriam, 1988).

Interviews vary in type from highly structured to conversational formats. Highly structured interviews seek to ensure that the same basic information is obtained from all participants. In contrast, conversational interviews are more spontaneous and occur from a natural flow of interaction between the interviewer and participants. I will combine these two approaches by asking the same questions to all participants but not necessarily in the same order. This combination of approaches allows for flexibility and in-depth conversations between participants and researchers (Fontana & Frey, 1994; Patton, 1990). To ensure accurate and complete information, I will use an audio tape recorder during each interview and take notes in case the tape recorder is malfunctioning.

Document Analysis

Documents may provide a rich source of information. Documents, artifacts (LeCompte & Preissle, 1993), or records (Hodder, 1994), are usually written materials found in a variety of forms. Merriam (1988) describes three major types of documents: public or archival records, personal documents, and physical traces. In this study, document analysis may provide information about program decisions, activities, and background, as well as suggest additional ideas about "important questions to pursue through more direct observations and interviewing"

(Patton, 1990, p. 233). Analysis of documents may provide information that key participants know nothing about and may offer a different perspective of the situation under study (Hodder, 1994).

For my purposes, I will rely mainly on public records or documents. Because I am studying an educational situation, many documents that provide information about the student or program (grades, student evaluations, legislation, reports, program records, or program guidelines) may contribute to my study. Furthermore, businesses may have documents in the form of memos, employee records, organizational rules, or other official and unofficial documents that pertain to their involvement in the youth apprenticeship program.

Document recording protocol will include photocopies when ever possible. If I cannot obtain a copy, I will record in field notes information about documents or materials by identifying key categories in the source of information (Creswell, 1994).

## Data Analysis Procedures

Data analysis in qualitative research often occurs simultaneously with data collection, interpretation, and reporting (Creswell, 1994). Analysis during data collection provides the researcher a method for narrowing the study by focusing on the specific problem associated with the study (Miles & Huberman, 1994). Analysis during the collection phase also helps the researcher develop analytical question that are relevant to the study to direct the research.

Wolcott (1994) maintains that there are three major approaches for organizing and reporting data--description, analysis, and interpretation. "Description addresses the question, 'What is going on here?'....Analysis addresses the identification of...how things work....Interpretations addresses [the question] 'What is to be made of it all'" (p. 12). Data collected from this study will be organized by searching for emerging themes based on the situated cognition theoretical framework.

Categories will be determined using the following guidelines: (a) categories that reflect the purpose of the research; (b) categories in which all relevant items can be placed; (c) categories are mutually exclusive; (d) categories are independent; and (e) categories that originate from a single classification basis (Merriam, 1988).

## Findings

I am currently completing a preliminary study of this research topic. By beginning with a preliminary study, I am able to select participants to observe and interview to assist me in identifying areas I may have overlooked. A preliminary study also assists the researcher in testing and refining questions associated with the study. In addition, a preliminary study allows me to develop a rapport with the participants and to "establish effective communication patterns" (Janesick, 1994, p. 213).

Preliminary findings are promising and interesting. I have found evidence of mentors using dimensions associated with a cognitive apprenticeship environment (see Figure 1). Specifically, mentors use modeling, coaching, and scaffolding with the youth apprentices to assist them in learning specific facts or procedures. I have also see and heard how the mentors gradually increase the difficulty and variety of tasks in order to provide the youth apprentice with a broader and more thorough understanding of the job and the work environment.

I have data to support each of the research questions posed in this study. Findings that support question #1 include the following: mentors provide apprentices as many experiences as possible to help them discover and explore all aspects of a job; mentors help youth apprentices gain confidence in their abilities by allowing them to apply their knowledge; and mentors model and demonstrate social skills needed to deal with other employees and customers.

Findings that support question #2 include: mentors use a variety of approaches to teach the youth apprentice; mentors provide youth apprentices with experiences that require them to figure it out for themselves; mentors answers questions asked by youth apprentices; mentors show, explain, and then observe the youth apprentice use their knowledge; mentors allow youth apprentice to trouble shoot to reason out the problem independently; and mentors explain why things are done a particular way or why a tool is used or not used in a particular way or circumstance.

Findings that support question #3 include: apprentices believe their mentor will help them if they don't know how to perform a particular task; and mentors recognize a youth apprentice's gains in confidence and abilities.

Findings that support question #4 include: most youth apprentices believe their work experience is challenging and interesting, with many opportunities to learn new things; and students feel that their work experience has been good for exploring different careers of interest.

In a survey conducted by Jobs for the Future (JFF), more than half the students believe that they spend more than half their time at work learning new information or practicing new skills. In addition, most youth apprentices describe their workplace as follows: a) a place where people work hard; b) more fun than school; c) a place that encourages the development of good work habits; d) more important than school; e) a place that is preparing them to advance to a better paying job; f) a place where they can work upon completion of high school; and g) a place where work is related to areas studied in school.

Data from interviews with management, mentors, and youth apprentices in the business revealed that all felt that on-the-job experience helps youth apprentices develop the skills needed to determine the magnitude or extent of a problem and that students were able to use knowledge learned on the job in school. In addition, the youth apprenticeship program helps the students gain a better understanding of what to expect on the job and in the work environment through hands-on experiences.

Document analysis of evaluation reports for youth apprentices reveal that the youth apprentices gained proficiency in most skills from the first reporting period to the second reporting period. Specifically, the evaluations show evidence of student gains in the following areas: use of standard test equipment, communications (written and oral), general office procedures, ability to perform a wide range of duties, ability to work independently, and problem solving.

Other themes discovered that were not originally considered to be an issue include employers concerns about the following areas: immaturity, work ethics, ability to perform a wide range of

tasks, and knowledge of basic skills. In addition, youth apprentices expressed that they learned a wider variety of tasks on the job than at school.

## Recommendations and Conclusions

To gain insight into the nature of learning in a workplace, more research should be conducted. Although it is assumed that learning has been accomplished in our schools, research now suggests that learning solely in a classroom may not have significant relevance or meaning for today's youth (Raizen, 1989). Youth apprenticeship programs may be one alternative form of instruction that assists students in becoming productive adults by providing them with a relevant, meaningful, and contextual education by linking school and work.

Although this study is not final, emerging themes and findings appear to support the effectiveness of youth apprenticeship programs for providing students with a contextual and relevant education. As more data is collected, not only will more themes will emerge, I will also be able to determine additional considerations regarding further data collection (i.e., selection of participants and additional questions, ).

Preliminary findings suggest that changes in the educational delivery system and adjustments in instructional techniques, such as those used in youth apprenticeship programs, may have positive effects for students, schools, and businesses. These positive effects include providing students with work experience, guided learning opportunities, a structured linkage between school and adult life, and an integration of academics and authentic work experiences (Stern, 1992). By exploring the experiences and feelings of management, workers, mentors and youth apprentices toward youth apprenticeship programs, I am able to determine if participants believe these programs are effective.

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Figure 1

Dimensions for Cognitive Apprenticeship Environments

| CONTENT | METHOD | SEQUENCING | SOCIOLOGY |
|---|---|---|---|
| ***Domain Knowledge*** Facts & Procedures | ***Modeling*** Students learn by observing | ***Increasing Complexity*** Increase difficulty gradually | ***Situated Learning*** Reflects real world situations |
| ***Heuristic Strategies*** Tricks of the Trade | ***Coaching*** Providing hints to students | ***Increasing Diversity*** Increase variety | ***Community of Expert Practice*** Communication of expert procedures |
| ***Control Strategies*** Metacognitive Skills | ***Scaffolding & Fading*** Teacher support lessens | ***Global to Local Skills*** Focus on whole before parts | ***Intrinsic Motivation*** Learning for personal reasons |
| ***Learning Strategies*** How to Learn | ***Articulation*** Students verbalize learning process | | ***Cooperation*** Students working together |
| | ***Reflection*** Students compare performances | | |
| | ***Exploration*** Student's own problem solving strategy | | |

Note: Figure adapted from Teaching Advanced Skills to At-Risk Students (p. 228), by B. Means, C. Chelemer, and M. S. Knapp, 1991, San Francisco: Jossey-Bass. Copyright 1991 by Jossey-Bass.